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November 20, 2007

**FACSIMILE TRANSMISSION COVER SHEET**To: Mrs. Magdalen Greenlief  
Office of the Commissioner for Patents

Fax: (571) 273-0125

From: James A. Oliff

Your Ref.: 10/593,635

Our Ref.: 129519

Number of Pages Sent (Including cover sheet):

15

Prepared By: dxc

Comments:

Sent By:

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# REQUEST FOR PARTICIPATION IN THE PATENT PROSECUTION HIGHWAY (PPH) PILOT PROGRAM BETWEEN THE JPO AND THE USPTO

Application No.: 10/593,635 First Named Inventor: Masashi HAKARIYA

Filing Date: 09/21/06 Attorney Docket No.: 129519

Title of the Invention: CONTROL SYSTEM OF INTERNAL COMBUSTION ENGINE

THIS REQUEST FOR PARTICIPATION IN THE PPH PILOT PROGRAM MUST BE FAXED TO:  
THE OFFICE OF THE COMMISSIONER FOR PATENTS AT 571-273-0125 DIRECTED TO THE ATTENTION OF MAGDALEN GREENLIEF

APPLICANT HEREBY REQUESTS PARTICIPATION IN THE PATENT PROSECUTION HIGHWAY (PPH) PILOT PROGRAM AND PETITIONS TO MAKE THE ABOVE-IDENTIFIED APPLICATION SPECIAL UNDER THE PPH PILOT PROGRAM.

The above-identified application validly claims priority under 35 U.S.C. 119(a) and 37 CFR 1.55 to one or more corresponding JPO application(s).

The JPO application number(s) is/are: 1) 2005-6036, 2) 2005-27487

The filing date of the JPO application(s) is/are: 1) 01/13/05 2) 02/03/05

## I. List of Required Documents:

a. A copy of all JPO office actions (excluding "Decision to Grant a Patent") in the above-identified JPO application(s).

☒ Is attached.

☐ Is available via Dossier Access System. Applicant hereby requests that the USPTO obtain these documents via the Dossier Access System.

\*It is not necessary to submit a copy of the "Decision to Grant a Patent" and an English translation thereof.

b. A copy of all claims which were determined to be patentable by the JPO in the above-identified JPO application(s).

☒ Is attached.

☐ Is available via Dossier Access System. Applicant hereby requests that the USPTO obtain these documents via the Dossier Access System.

c. English translations of the documents in a. and b. above along with a statement that the English translations are accurate are attached.

Information disclosure statement listing the documents cited in the JPO office actions is attached.

Copies of all documents are attached except for U.S. patents or U.S. patent application publications.

[Page 1 of 2]

This collection of information is required by 35 U.S.C. 119, 37 CFR 1.55, and 37 CFR 1.102(d). The information is required to obtain or retain a benefit by the public, which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. FAX COMPLETED FORMS TO: Office of the Commissioner for Patents at 571-273-0125, Attention: Magdalen Greenleaf.

**REQUEST FOR PARTICIPATION IN THE PATENT PROSECUTION HIGHWAY (PPH) PILOT PROGRAM  
BETWEEN THE JPO AND THE USPTO**

Application No.: 10/593,635

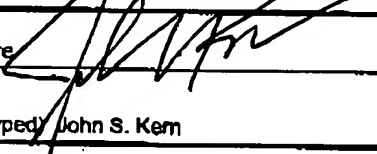
First Named Inventor:

Masashi HAKARIYA

**II. Claims Correspondence Table:**

Claims in US Application	Patentable Claims in JP Application	Explanation regarding the correspondence
1 and 2	1 and 2	Claims 1 and 2 of the pending U.S. application correspond to patentable claims 1 and 2 of JP 2005-6036.
3 and 4	1 and 2	Claims 3 and 4 of the pending U.S. application correspond to patentable claims 1 and 2 of JP 2005-27487.

**III. All the claims in the US application sufficiently correspond to the patentable/allowable claims in the JPO application.****IV. Payment of Fees:**The Commissioner is hereby authorized to charge the petition fee under 37 CFR 1.17(h) as required by 37 CFR 1.102(d) to ☒ Deposit Account No. 15-0461☐ Credit Card. Credit Card Payment Form (PTO-2038) is attached.

Signature 	Date 11/15
Name (Print/Typed) John S. Kern	Registration Number 42,719

Best Available Copy

**WARNING:**

Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available.

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The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

12. Nov. 2007 16:42

Seiwa Patent&amp;Law 81-3-5470-1911

NO. 9571 P. 10/11

**CERTIFICATION OF ENGLISH LANGUAGE  
TRANSLATION OF DOCUMENTS**

I, [Kimikazu Ito], hereby declare and state that I am knowledgeable of each of the Japanese and English languages. I hereby certify that the attached English language translation is an accurate translation of the following documents;

"All claims which were determined to be patentable by the JPO in the Japanese Patent Application No. 2005-6036"; and,

"All claims which were determined to be patentable by the JPO in the Japanese Patent Application No. 2005-27487".

November 8, 2007

*Kimikazu Ito*  
Kimikazu Ito

An English Translation of all claims which were  
determined to be patentable by the JPO in the Japanese  
Patent Application No. 2005-6036

5           1. A control system for an internal combustion  
engine provided with a plurality of cylinders,  
introducing air into an intake passage part extending  
from a throttle valve to an intake valve through the  
throttle valve in exactly a throttle valve air passage  
10 amount, and discharging air from the intake passage part  
through an intake valve in exactly a cylinder air filling  
amount to fill a cylinder at the time of a suction  
stroke,

15           which system divides the cylinder air filling  
amount into a first amount of air and a second amount of  
air, the first amount of air being an excess of a  
cylinder air filling amount with respect to a throttle  
valve air passage amount occurring due to a suction  
stroke,

20           is provided with an intake pressure drop  
detecting means for detecting a drop in intake pressure  
occurring due to a suction stroke being performed,  
constituting an intake pressure drop, for each cylinder,

25           a first air amount calculating means for  
calculating the first amount of air for a cylinder based  
on its intake pressure drop,

30           a throttle valve air passage amount detecting  
means for detecting a throttle valve air passage amount,  
a second air amount calculating means for  
calculating the second amount of air for a cylinder based  
on the throttle valve air passage amount,

35           a cylinder air filling amount calculating means  
for totaling the first amount of air and the second  
amount of air to calculate the cylinder air filling  
amount for a cylinder, and

          a control means for controlling the engine  
based on the cylinder air filling amount of the cylinder,

- 2 -

the first air amount calculating means setting  
a set crank angle range so as to include the suction  
strokes of at least two cylinders for which cylinder air  
filling amounts are to be calculated, calculating the  
5 total value of the intake pressure drop of the cylinders  
performing a suction stroke in the set crank angle range,  
and calculating the first amount of air based on each  
intake pressure drop and the intake pressure drop total  
value.

10

2. A control system for an internal combustion  
engine as set forth in claim 1, wherein when backflow of  
air from inside a cylinder to the intake passage part  
occurs at the end of a suction stroke, the action of the  
15 second air amount calculating means calculating the  
second amount of air is prohibited.

12. Nov. 2007 16:41

Seiwa Patent&amp;Law 01-3-5470-1911

JP 2007-20030 P. 4/11

## 【書類名】 特許請求の範囲

## 【請求項1】

複数の気筒を備え、スロットル弁から吸気弁までの吸気通路部分内にスロットル弁を介し空気がスロットル弁通過空気量だけ流入し、吸気行程が行われると該吸気通路部分からそれぞれの吸気弁を介し空気が筒内充填空気量だけ流出して各気筒内に充填される内燃機関において、筒内充填空気量を第1空気量と第2空気量とに分割し、該第1空気量は、吸気行程が行われることにより生ずるスロットル弁通過空気量に対する筒内充填空気量の超過分であり、吸気行程が行われることにより生ずる吸気圧の低下量である吸気圧低下量を気筒毎に検出する吸気圧低下量検出手段と、それぞれの吸気圧低下量に基づいて各気筒の第1空気量を算出する第1空気量算出手段と、スロットル弁通過空気量を検出するスロットル弁通過空気量検出手段と、スロットル弁通過空気量に基づいて各気筒の第2空気量を算出する第2空気量算出手段と、それぞれの第1空気量と第2空気量とを合計することにより各気筒の筒内充填空気量を算出する筒内充填空気量算出手段と、各気筒の筒内充填空気量に基づいて機関制御を行う制御手段と、を具備し、該第1空気量算出手段は、筒内充填空気量を算出すべき少なくとも二つの気筒の吸気行程が含まれるように設定クランク角範囲を設定し、該設定クランク角範囲内で吸気行程が行われた気筒の吸気圧低下量の合計値を算出し、それぞれの吸気圧低下量と該吸気圧低下量合計値とに基づいて第1空気量を算出する、制御装置。

## 【請求項2】

吸気行程末期に筒内から吸気通路部分への空気の逆流が生ずるときには前記第2空気量算出手段による第2空気量の算出作用を禁止する請求項1に記載の内燃機関の制御装置。



An English translation of all claims which were  
determined to be patentable by the JPO in the Japanese  
Patent Application No. 2005-27487

5           1. A cylinder air filling amount estimating system  
of an internal combustion engine provided with a  
plurality of cylinders and a plurality of intake valves,  
which system divides the cylinder air filling  
amount to a cylinder into a basic amount of air and an  
10 excess amount of air flowing from an intake passage part  
to the inside of the cylinder exceeding a throttle valve  
air passage flow rate due to opening of an intake valve,  
and

15           is provided with a basic air amount calculating  
means for calculating a basic air amount based on a  
throttle valve air passage flow rate of air flowing into  
the intake passage part through the throttle valve and  
the opening time of each intake valve,

20           an excess air amount calculating means for  
calculating an excess air amount based on the drop in  
intake pressure due to opening of said intake valve, and

          a cylinder air filling amount calculating means  
for totaling said basic air amount and excess air amount  
to calculate a cylinder air filling amount to a cylinder,

25           said basic air amount calculating means  
calculating a virtual intake valve opening time so that  
the average air flow rate to all cylinders becomes equal  
to the throttle air passage flow rate and using said  
virtual intake valve opening time as the opening time of  
30 an intake valve.

35           2. A cylinder air filling amount estimating system  
as set forth in claim 1, wherein said basic air amount  
calculating means uses said virtual intake valve opening  
time as the opening time of an intake valve when backflow  
of air to the intake passage part occurs near the intake  
valve opening timing or near the intake valve closing

NOV-20-2007 16:15

OLIFF & BERRIDGE, PLC

703 836 2787 P.13

12. Nov. 2007 16:42

Seiwa Patent&Law 81-3-5470-1911

NO. 9571 P. 9/11

- 2 -

timing.

## 【書類名】 特許請求の範囲

## 【請求項 1】

複数の気筒と複数の吸気弁とを有する内燃機関の筒内充填空気量推定装置であって、

各気筒への筒内充填空気量を、基本空気量と、吸気弁が開弁することによりスロットル弁通過空気流量を超えて吸気通路部分から気筒内に流入する超過空気量とに二分割し、

吸気通路部分にスロットル弁を介して流入するスロットル弁通過空気流量と各吸気弁の開弁時間とに基づいて基本空気量を算出する基本空気量算出手段と、

上記吸気弁の開弁による吸気圧の低下量に基づいて超過空気量を算出する超過空気量算出手段と、

上記基本空気量と超過空気量とを合計して各気筒への筒内充填空気量を算出する筒内充填空気量算出手段とを具備する筒内充填空気量推定装置において、

上記基本空気量算出手段は、全気筒への平均空気流量がスロットル通過空気流量と等しくなるような仮想的な吸気弁開弁時間を算出し、該仮想的な吸気弁開弁時間を上記吸気弁の開弁時間として用いる筒内充填空気量推定装置。

## 【請求項 2】

上記基本空気量算出手段は、吸気弁開弁時期付近又は吸気弁開弁時期付近において上記吸気通路部分への空気の逆流が生ずるときに、上記仮想的な吸気弁開弁時間を上記吸気弁の開弁時間として用いる請求項 1 に記載の筒内充填空気量推定装置。

**Disclaimer:**

This English translation is produced by machine translation and may contain errors. The JPO, the INPIT, and those who drafted this document in the original language are not responsible for the result of the translation.

**Notes:**

1. Untranslatable words are replaced with asterisks (\*\*\*\*).
2. Texts in the figures are not translated and shown as it is.

Translated: 01:37:49 JST 11/28/2007

Dictionary: Last updated 11/16/2007 / Priority:

## Decision to Grant a Patent

Application number: Application for patent 2005-006036

Date of Drafting: Heisei 19(2007) March 14

Patent examiner: SHOMURA, Yoichi 9718 3Z00

Title of invention: Control device of an internal-combustion engine

The number of claims: 2

Applicant: TOYOTA JIDOSHA KABUSHIKI KAISHA

Representative: AOKI, Atsushi (and 4 others)

This application is to be granted a patent as there is no reason for refusal.

Director General(p.p.) Director(p.p.) Examiner Assistant examiner Manager for Determination  
of Classification SASAKI, Seisho SHOMURA, Yoichi GOTO, Nobuaki 9133 9718 3516

1. Distinction of Patent: Usually

2. Reference documents: \*\*

3. Application of Patent Law, Section 30: Nothing

4. Change of Title of Invention: Nothing

5. International Patent Classification (IPC)

F02D 41/18 F, F02D 45/00 364D, F02D 45/00 366F

6. Deposition of Microorganism

7. Display of Purport that Retroactivity of Filing Date is not Accepted

## Decision to Grant a Patent(Memorandum)

Application number: Application for patent 2005-006036

1. Technical Fields to Be Searched (IPC, DB Name)

F02D 41/00-41/40 F02D 45/00

2. Reference patent documents

JP,2002-70633,A (JP, A) JP,2001-234798,A (JP, A) JP,2004-116459,A (JP, A)

3. Reference books and magazines

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[Translation done.]

**Disclaimer:**

This English translation is produced by machine translation and may contain errors. The JPO, the INPIT, and those who drafted this document in the original language are not responsible for the result of the translation.

**Notes:**

1. Untranslatable words are replaced with asterisks (\*\*\*\*).
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Translated: 01:39:01 JST 11/28/2007

Dictionary: Last updated 11/16/2007 / Priority:

## Decision to Grant a Patent

Application number: Application for patent 2005-027487

Date of Drafting: Heisei 19(2007) March 14

Patent examiner: SHOMURA, Yoichi 9718 3Z00

Title of invention: Restoration air content presumption equipment in a pipe of an internal-combustion engine

The number of claims: 2

Applicant: TOYOTA JIDOSHA KABUSHIKI KAISHA

Representative: AOKI, Atsushi (and 4 others)

This application is to be granted a patent as there is no reason for refusal.

Director General(p.p.) Director(p.p.) Examiner Assistant examiner Manager for Determination  
of Classification SASAKI, Seisho SHOMURA, Yoichi GOTO, Nobuaki 9133 9718 3516

1. Distinction of Patent: Usually

2. Reference documents: \*\*

3. Application of Patent Law, Section 30: Nothing

4. Change of Title of Invention: Nothing

5. International Patent Classification (IPC)

F02D 45/00 366E, F02D 45/00 370B

6. Deposition of Microorganism

7. Display of Purport that Retroactivity of Filing Date is not Accepted



## Decision to Grant a Patent(Memorandum)

Application number: Application for patent 2005-027487

### 1. Technical Fields to Be Searched (IPC, DB Name)

F02D 45/00

### 2. Reference patent documents

JP,2002-70633,A (JP, A) JP,2001-234798,A (JP, A) JP,2004-116459,A (JP, A)

### 3. Reference books and magazines

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[Translation done.]

## **I. List of Required Documents**

### **d. Information Disclosure Statement listing the documents cited in the JPO office actions.**

- Since no Office Actions were issued, no documents are required to be submitted with an IDS